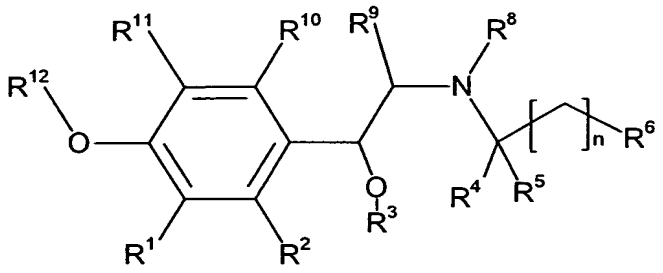
Patent Claims

1. Compounds of general formula (I),



wherein

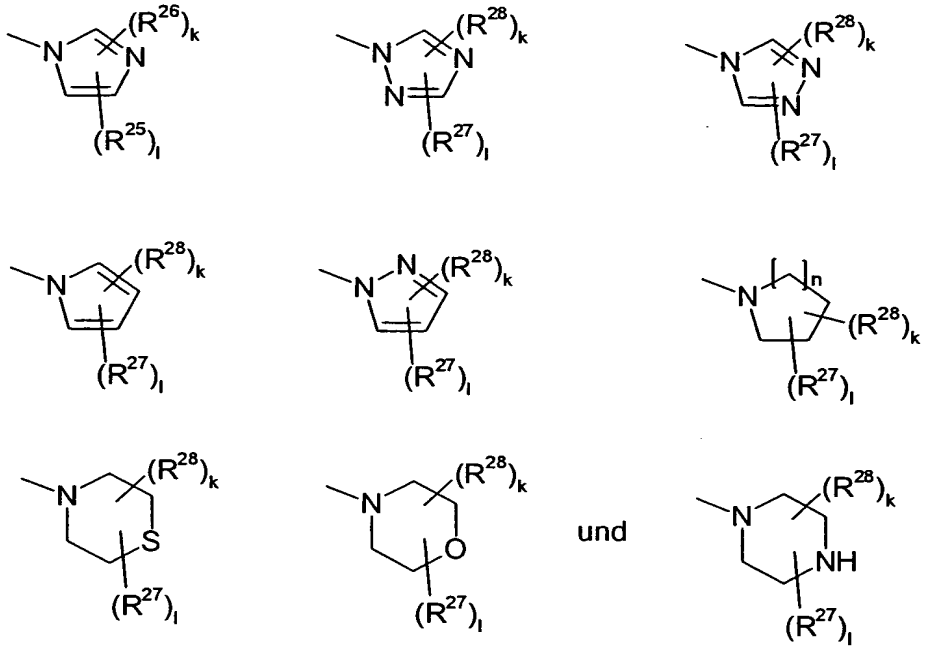
R^1, R^2, R^{10}, R^{11} independently of one another denote a group selected from among hydrogen, halogen, CN, NO_2, and $-NHCXNH_2$ or
a group selected from among optionally substituted $-COR^7$, $-COOR^7$, $-CONR^7R^{13}$, $-OR^{14}$, $NR^{13}R^{15}$, C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl, $-NR^{16}CX-R^{17}$, $-NR^{18}CX-OR^{19}$, $-NR^{20}SO_mR^{21}$, $-SO_pNR^{22}R^{23}$ and $-SO_qR^{24}$.

m, p, q denotes 0, 1 or 2
n denotes 0, 1, 2 or 3

R^3 denotes hydrogen or a group selected from among optionally substituted C_1-C_{10}-alkyl, C_6-C_{10}-aryl, heterocyclyl and C_3-C_8-cycloalkyl, $-CX-C_1$-C_{10}-alkyl, $-CX-C_6$-C_{14}-aryl,

R^4, R^5 independently of one another denote hydrogen, halogen or optionally substituted C_1-C_{10}-alkyl,
or
R^4 and R^5 together denote a C_3-C_8-alkyl bridge ,

R^6 denotes a group selected from among the general formulae



und

l,k independently of one another denote 1,2 or 3,

R^{25}, R^{26}, R^{27}, R^{28} independently of one another denote a group selected from among hydrogen, OH, halogen, CN and NO_2,
or
a group selected from among optionally substituted C_1-C_{10}-alkyl, C_6-C_{18}-aryl, heteroaryl, heterocyclyl, -CX-R^{17}, -OR^{14}, $NR^{13}R^{15}$, C_2-C_8-cycloalkyl, -$NR^{20}SO_mR^{21}$, -$SO_pNR^{22}R^{23}$, -SO_qR^{24}, -NR^{18}CX-R^{19}, -NR^{18}CXOR^{17}, while R^{25} and R^{26} cannot simultaneously denote hydrogen,

R^8 denotes hydrogen or a group selected from among optionally substituted C_1-C_{10}-alkyl, C_6-C_{18}-aryl, -SO_q- C_1-C_{10}-alkyl, -SO_q-C_6-C_{14}-aryl, -CX- C_1-C_{10}-alkyl, -CX-C_6-C_{14}-aryl, C_6-C_{10}-aryl, heterocyclyl and C_3-C_8-cycloalkyl

R^9 denotes hydrogen or a group selected from among optionally substituted C_1-C_{10}-alkyl, C_6-C_{14}-aryl, heteroaryl, C_3-C_8-cycloalkyl and heterocycloalkyl,

R^{12} denotes hydrogen or a group selected from among optionally substituted benzyl, C_1-C_{12}-alkyl and C_6-C_{14}-aryl,

R^7, R^{13}, R^{15}, R^{16}, R^{18}, R^{20}, R^{22}, R^{23} independently of one another denote hydrogen, or
a group selected from among optionally substituted C_1-C_{10}-alkyl, C_6-C_{14}-aryl, heterocyclyl and C_3-C_8-cycloalkyl

R^{14}, R^{19}, R^{29} independently of one another denote hydrogen or a group selected from among optionally substituted C_1-C_{10}-alkyl, C_6-C_{14}-aryl, C_3-C_8-cycloalkyl, heteroaryl, heterocyclyl, -$CXNR_{13}R_{15}$ and -CXR_7

R^{17} denotes a group selected from among C_1-C_{10}-alkyl, C_6-C_{14}-aryl, heterocyclyl, heteroaryl and C_3-C_8-cycloalkyl

R^{21}, R^{24} independently denote hydrogen or OH, or
a group selected from among optionally substituted $N(C_1$-C_{10}-alkyl$)_2$, $N(C_3$-C_8-cycloalkyl), C_1-C_{10}-alkyl, C_6-C_{14}-aryl, heterocyclyl, heteroaryl and C_3-C_8-cycloalkyl

and

X denotes O, S or NR^{29},

optionally in the form of the tautomers, the racemates, the enantiomers, the diastereomers and the mixtures thereof, as well as optionally the pharmacologically acceptable acid addition salts thereof.

2. Compounds according to claim 1,
wherein

R^{10}, R^{11} independently of one another denote hydrogen or halogen,

m, p, q independently of one another denote 0, 1 or 2

n denotes 0, 1, 2 or 3

R^3 denotes hydrogen or C_1-C_5-alkyl

R^4, R^5 independently of one another denote hydrogen or C_1-C_5-alkyl,

R^8 denotes a group selected from among hydrogen, C_1-C_5-alkyl, -SO_q- C_1-C_5-alkyl, -SO_q-C_6-C_{14}-aryl, phenyl and C_3-C_6-cycloalkyl

R^9 denotes hydrogen or C_1-C_{10}-alkyl

R^{12} denotes hydrogen or benzyl

R^{13}, R^{15}, R^{16}, R^{18} independently of one another denote a group selected from among hydrogen, C_1-C_5-alkyl, C_3-C_6-cycloalkyl and phenyl

R^{14}, R^{19} independently of one another denote hydrogen or C_1-C_5-alkyl,

and

R^{17} denotes optionally substituted C_1-C_5-alkyl or C_6-C_{10}-aryl.

3. Compounds according to claim 1 or 2, wherein

R^{10}, R^{11} denote hydrogen

m, p, q denote 0, 1 or 2
n denotes 0, 1, 2 or 3

R^3 denotes hydrogen

R^4, R^5 independently of one another denote hydrogen or methyl,

R^8 denotes hydrogen, -SO_q-C_6-C_{14}-aryl or –SO_2-C_1-C_5-alkyl

R^9 denotes hydrogen

R^{12} denotes hydrogen or benzyl,

R^{13}, R^{15}, R^{16}, R^{18} independently of one another denote a group selected from among hydrogen, C_1-C_{15}-alkyl and phenyl,

R^{14}, R^{19} independently of one another denote hydrogen or C_1-C_5-alkyl,

and

R^{17} denotes C_1-C_5-alkyl or C_6-C_{14}-aryl.

4. Compounds according to one of claims 1 to 3, wherein

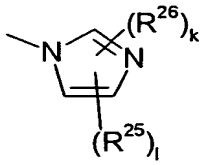
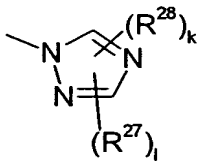
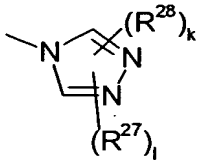
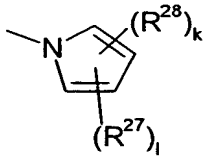
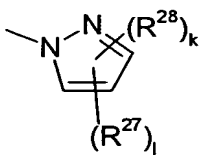
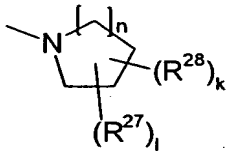
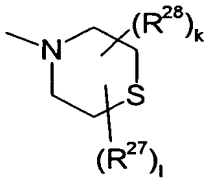
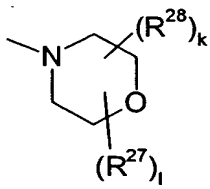
R^1 denotes a group selected from among hydrogen, NO_2, NH_2, -NHCX-R^{17} and -$NHSO_2R^{21}$

R^2 denotes hydrogen or halogen

n denotes 2,

R^3 denotes hydrogen
R^4, R^5 denote hydrogen or methyl

R^6 denotes a group selected from among the general formulae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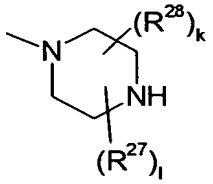


l,k denote 1

R^{26}, R^{27} denote hydrogen,

R^8 denotes hydrogen or $-SO_2CH_3$,

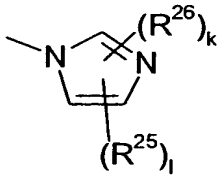
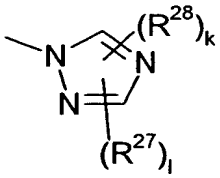
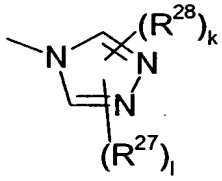
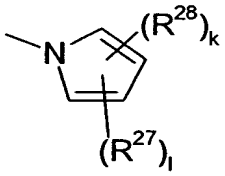
R^9 denotes hydrogen,

R^{10}, R^{11} denote hydrogen, and

R^{12} denotes hydrogen or benzyl.

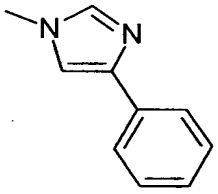
5. Compounds according to one of claims 1 to 4, wherein

R^6 denotes a group selected from among the general formulae

6. Compounds according to one of claims 1 to 5, wherein

R^6 denotes an optionally substituted group of formula (j)


(j)

7. Compounds of formula (I) according to one of claims 1 to 6 for use as pharmaceutical compositions.

8. Compounds of formula (I) according to one of claims 1 to 6 for use as pharmaceutical compositions with a selective beta-3-agonistic activity.

9. Use of a compound of formula (I) according to one of claims 1 to 6 for preparing a pharmaceutical composition for the treatment and/or prevention of diseases connected with the stimulation of beta-3-receptors.

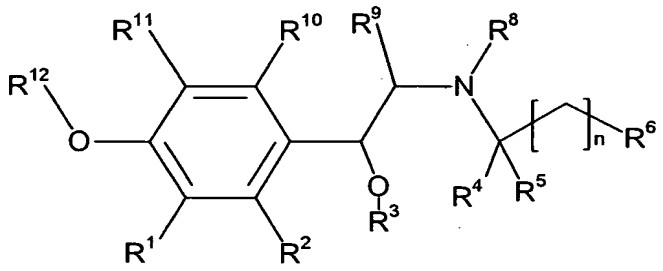
10. Method for the treatment and/or prevention of diseases connected with the stimulation of beta-3-receptors, characterised in that an effective amount

of a compound of formula I according to claim 1 to 6 is administered to a patient.

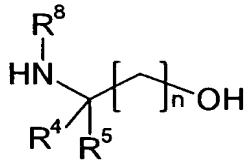
11. Pharmaceutical composition, containing as active substance one or more compounds of general formula (I) according to one of claims 1 to 6 or the physiologically acceptable salts thereof optionally combined with conventional excipients and/or carriers.

12. Pharmaceutical composition containing as active substance one or more compounds of general formula (I) according to one of claims 1 to 6 or the physiologically acceptable salts thereof and one or more active substances selected from among antidiabetics, inhibitors of protein tyrosinephosphatase 1, substances which influence deregulated glucose production in the liver, lipid lowering agents, cholesterol absorption inhibitors, HDL-raising compounds, active substances for the treatment of obesity and modulators or stimulators of the adrenergic via alpha 1 and alpha 2 as well as beta 1, beta 2 and beta 3 receptors.

13. Process for preparing a compound of general formula (I),



wherein
R^1-R^{28} and X may have the meanings given in claims 1 to 6, characterised in that a compound of general formula (II)

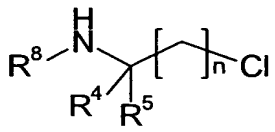


(II)

wherein

R^4 and R^5 have the meanings given in claims 1 to 6,

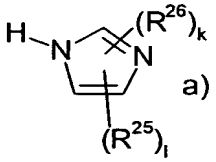
is converted by means of a chlorinating agent into a compound of formula (III)



(III)

the compound of formula (III), optionally provided with an amino protective group, is reacted with an optionally substituted compound selected from among the general formulae (IVa) to (IVi)

(IV)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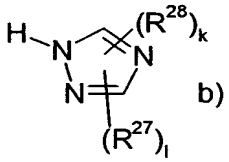
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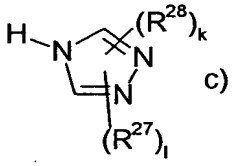
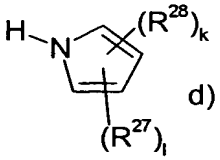
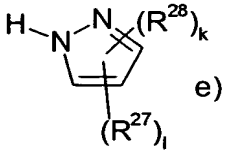
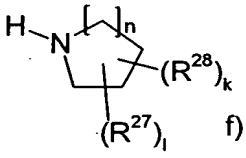

c)


d)


e)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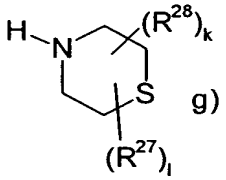
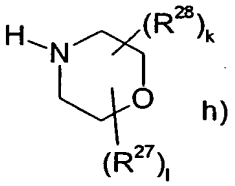

g)


h)

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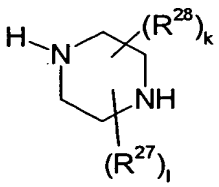
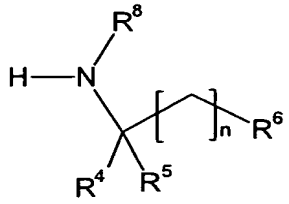

i)

wherein

k, l, R^{27} and R^{28} have the meanings given in claims 1 to 6,

and the product of formula (V)

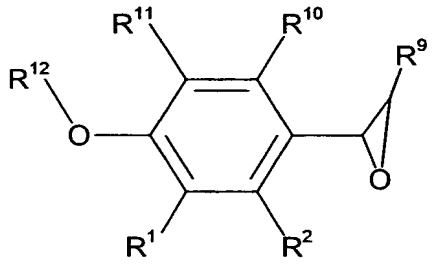
(V)



wherein n, R^4, R^5, R^6 and R^8 have the meanings given in claims 1 to 6,

is reacted with a compound of formula (VI)

(VI)



wherein R^1, R^2, R^9 and R^{10} to R^{12} have the meanings given in claims 1 to 6.